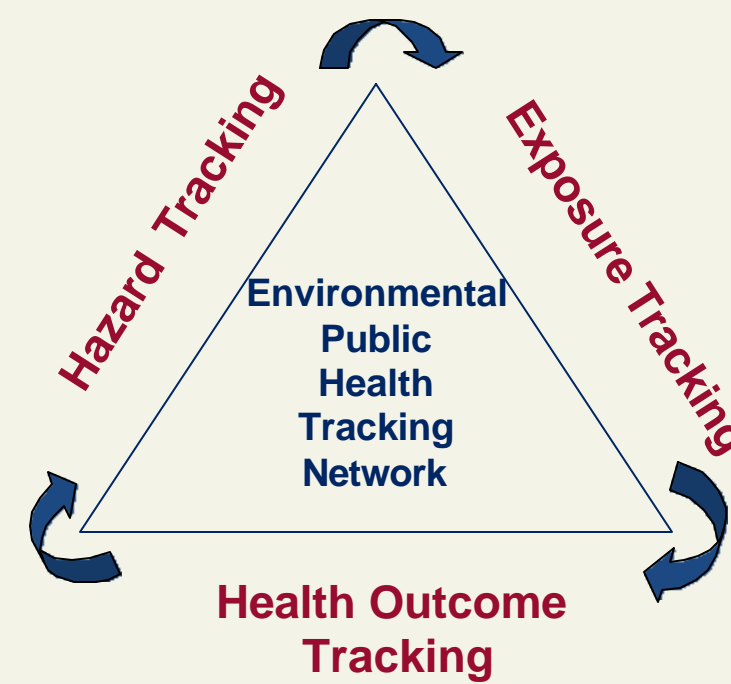


Johns Hopkins Center for Excellence in Environmental Public Health Tracking



Thomas A. Burke, PhD, MPH
Professor and Associate Chair

June 9, 2003



America's Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network

Technical Report

September 12, 2000

Sponsored by:

The Pew Environmental Health Commission
At the Johns Hopkins School of Hygiene and Public Health

Report by:

Environmental Health Tracking Project Team
Johns Hopkins School of Hygiene and Public Health
Department of Health Policy and Management


What is Environmental Public Health Tracking?

Environmental public health tracking is the ongoing collection, integration, analysis, and interpretation of data about the following factors:

- **Environmental hazards**
- **Exposure to environmental hazards**
- **Health effects potentially related to exposure to environmental hazards**

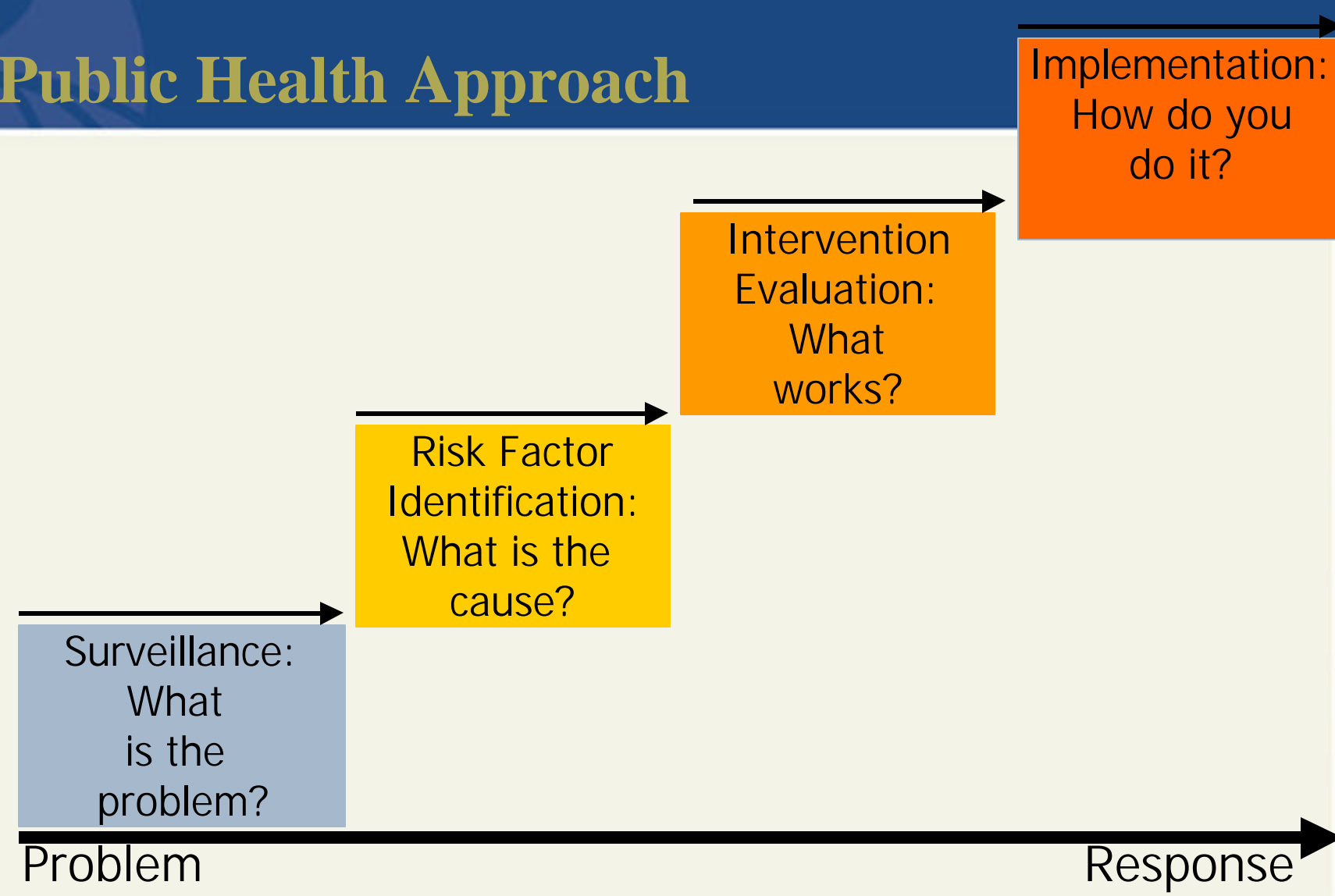
What is Surveillance?

Surveillance is the “ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know.



Surveillance = Tracking

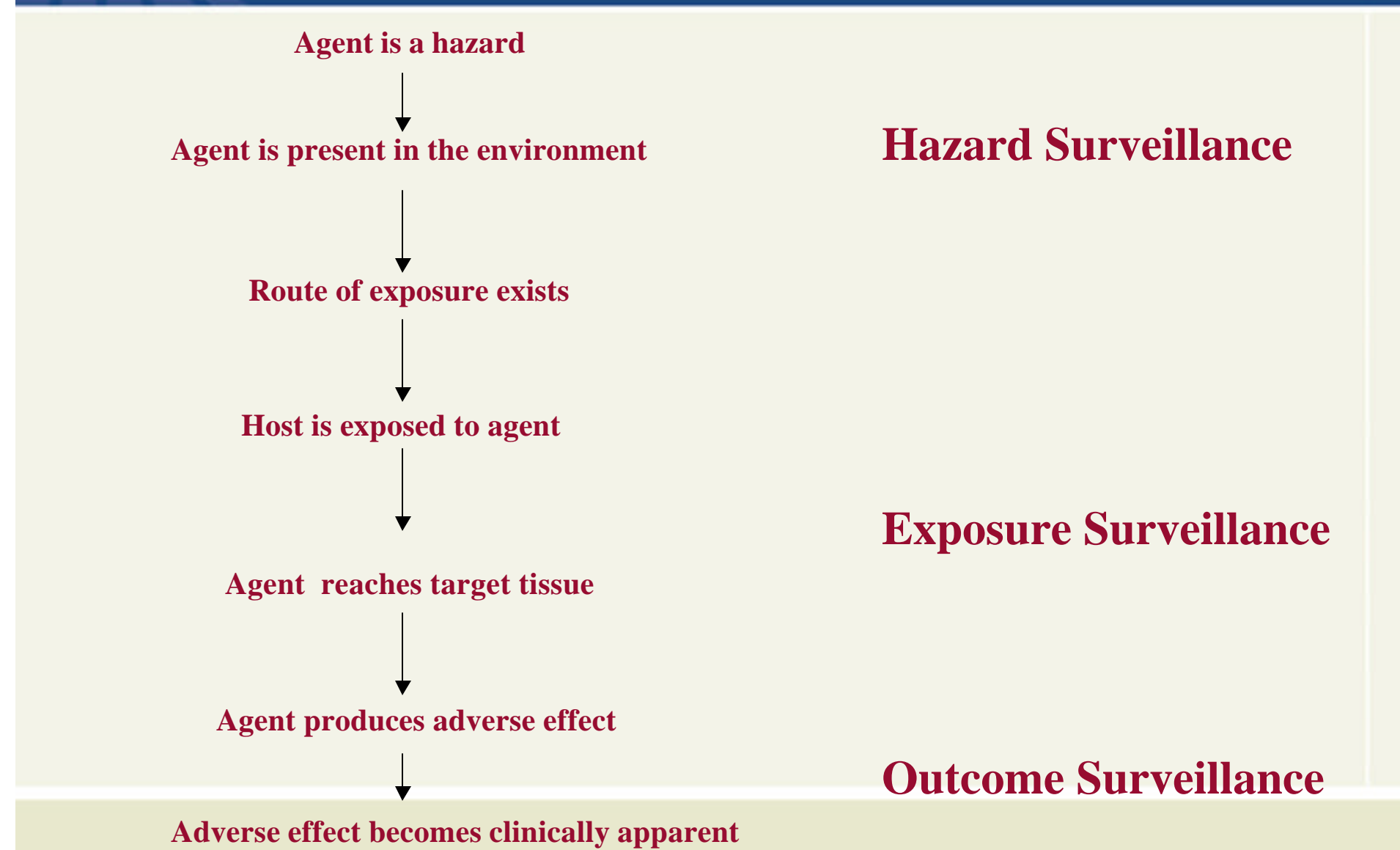
Public Health Approach





Tracking = Tools and Information

Three Types of Public Health Surveillance for Adverse Environmental Health Threats





Tracking = Answers and Causality





Autism Diagnoses Double in California

Diagnoses of autism have nearly doubled in the last four years among children in California, state officials reported yesterday. They said they could not explain the increase. "The number of cases is accelerating," said Dr. Ron Huff, a senior psychologist at the Department of Developmental Services, who oversaw preparation of the report, "and we do not know why."

New York Times, May 14, 2003



March 5, 2002

**Clinton, Reid To Hold News Conference Wednesday On Link Between
Environment And Public Health**

•

**Senators Will Be Joined By Co-Author Of New Report On Connection
Between Air Pollution And Lung Cancer, Heart Disease
Hearing Wednesday Will Focus On Need To Track Chronic Diseases**

**Senators Hillary Rodham Clinton and Harry Reid will hold a news
conference tomorrow, March 6, to discuss the link between
environment and public health. It will take place at 9:30 a.m., in Room
430 of the Dirksen Building, immediately prior to a Senate hearing
there on the subject.**


Political and Economic Pressures

Las Vegas Newspapers — **Real Estate** —

A promotional feature of the
Las Vegas Review-Journal and **Las Vegas SUN**.

Northern Nevada: Health studies hinder Fallon economy

By NICK HALEY
REAL ESTATE WRITER



Tracking

- **Brings us back to the first core function of public health - assessment**
- **Provides a foundation for redefining the role of environmental public health**
- **Is applicable to all of public health practice and research**
- **Is a foundation for providing the essential services of public health**

Grantees

20 State and Local Health Departments funded to:

- 1. Build environmental public health capacity**
- 2. Increase collaboration between environmental and health agencies**
- 3. Identify and evaluate existing data systems**
- 4. Build partnerships with non-governmental Organizations and communities**
- 5. Develop model systems that link data and can be applied to other states or localities.**



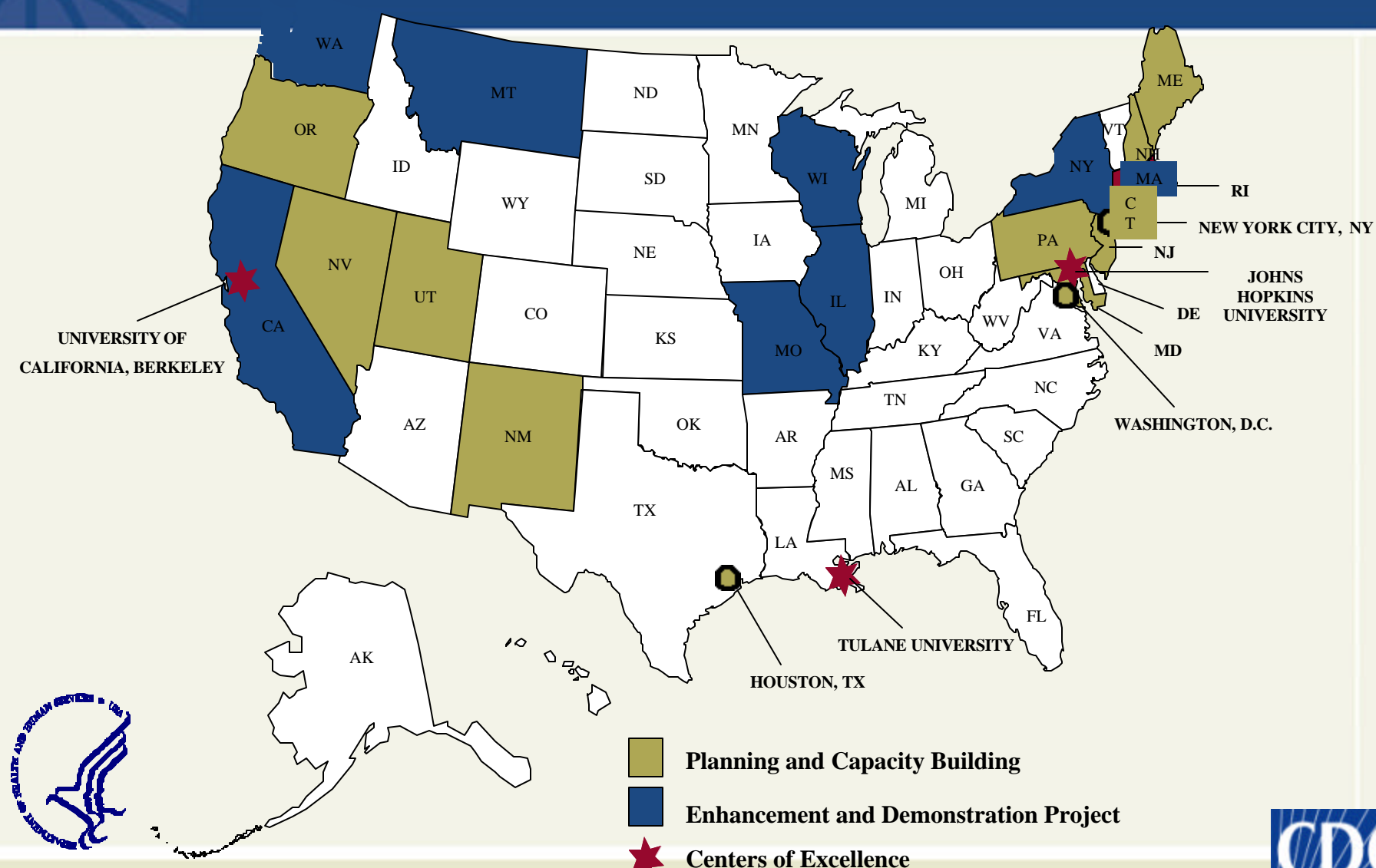
Centers of Excellence for Environmental Public Health Tracking

3 Schools of Public Health Funded to:

- 1. Support the efforts of state and local health departments;
and**
- 2. Investigate possible links between health effects and the
environment.**



The National Environmental Public Health Tracking Program - 2002



<http://www.cdc.gov/nceh/tracking/EPHTracking/EPHTracking.htm>





Tracking Network

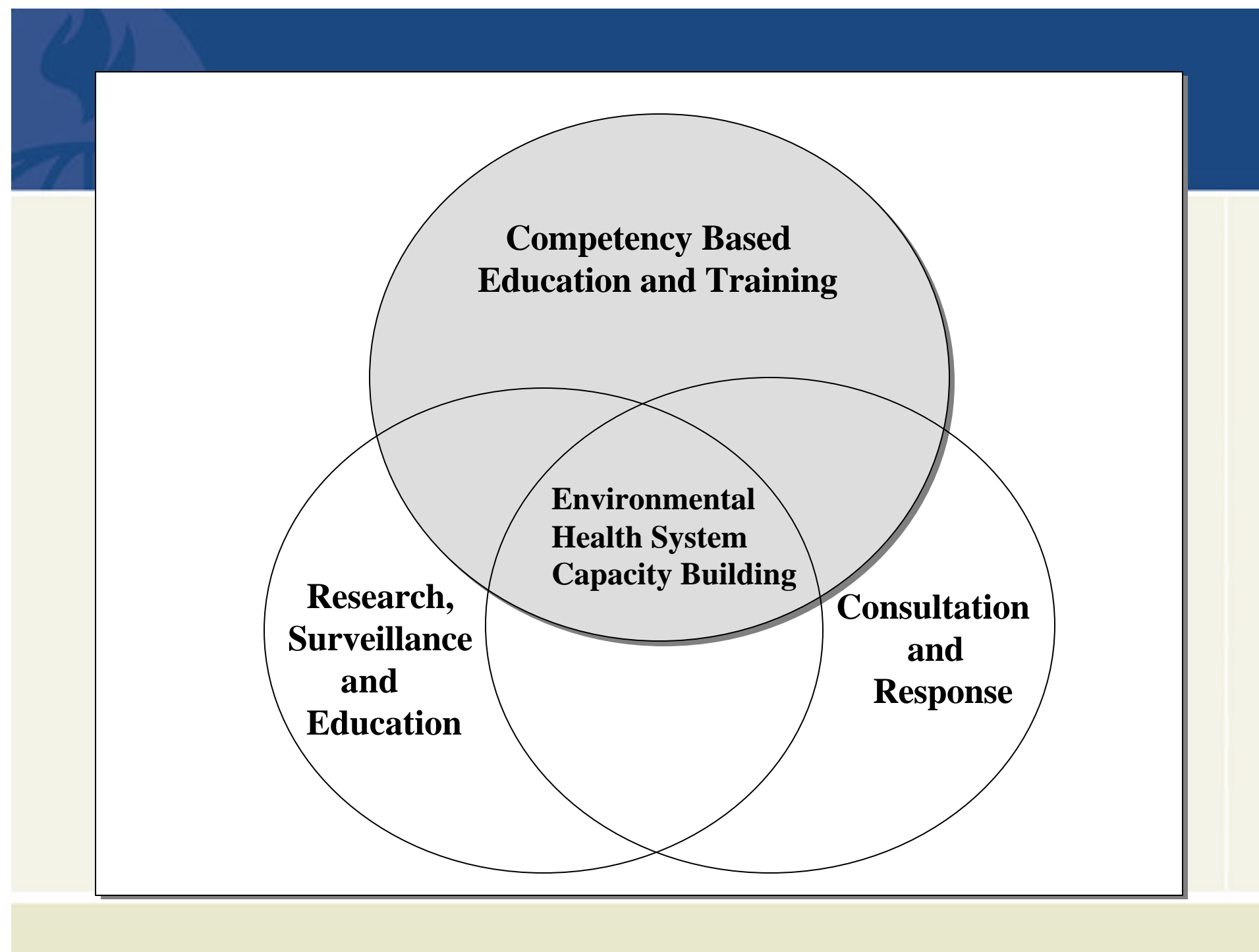
- **Establishing a new, strong network of environmental public health professionals**
- **Examining the national data/information resources**
- **Establishing environmental public health priorities**
- **Starting a training pipeline**
- **Extending the application of NCEH science**

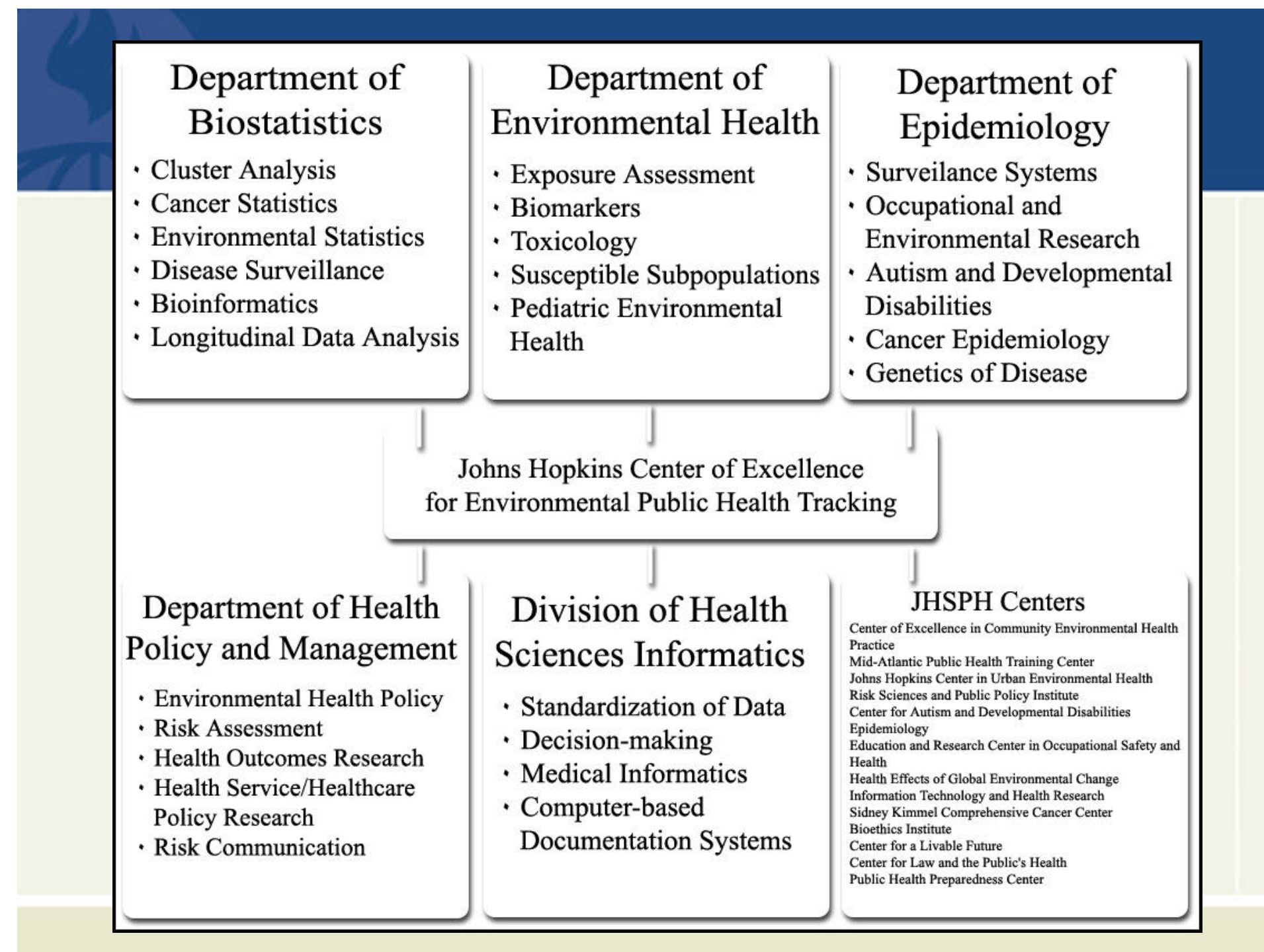


Hopkins Tracking Center Goals

- 1. Provide technical and research support;**
- 2. Strengthen the environmental public health workforce through education, training, and technical assistance; and**
- 3. Advance research to investigate the potential links between health effects and the environment**

Hopkins Partners	
Connecticut	
District of Columbia	
Maine	
Maryland	
*Massachusetts	
New Hampshire	
New York City	
*New York State	
Pennsylvania	
*Enhancement and Demonstration Projects	







Year 1 Proposed Activities

- 1. Site visits to 9 partners**
- 2. Input and guidance to partner tracking workgroups**
- 3. Inventory and analysis of key data sets**
- 4. Literature Reviews**
- 5. Trainings on key concepts**
- 6. Guidance on feasibility of using CDC/EPA Indicators**
- 7. Selection of 3-5 indicators to pilot for a national tracking system**
- 8. Selection of Epi study topic for years 2-3**
- 9. Year 1 State of Environmental Tracking Report**

Environmental Public Health Tracking Project

Methods

Epidemiological
Study
Statistical
Algorithms
Data linkage
methods

Indicators

Examine criteria for selection
of indicators
Evaluate existing data sources
Identify a pilot group
of indicators
Evaluate pilot group

Data and Legislation

Evaluation of national
and state health and
environmental
data and legislation
for feasibility of use
for EPHT

State of Environmental
Public Health
Tracking Report



Finding the Common Ground

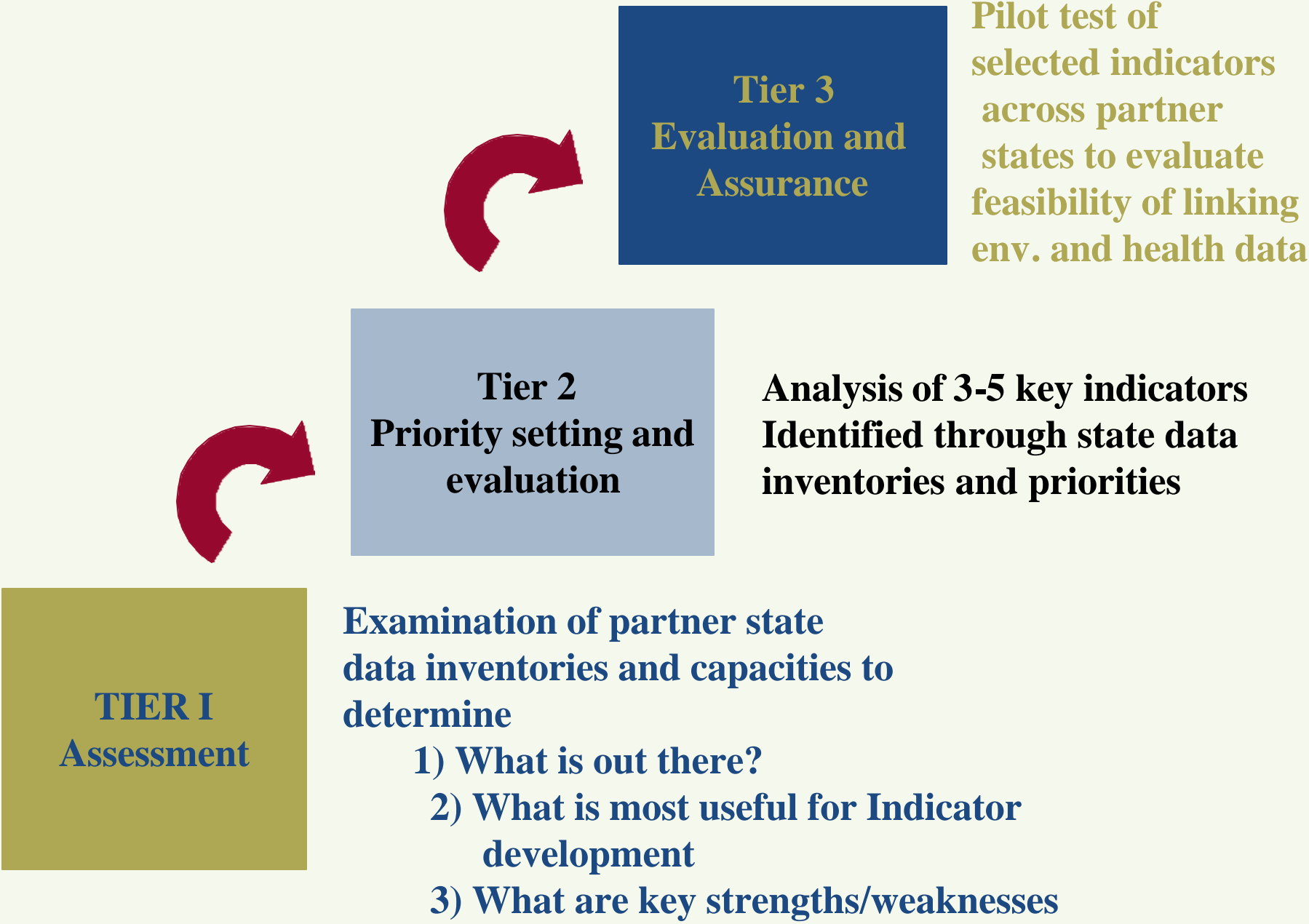
	Database	ME	NH	CT	NYC	PA	MD	DC	MA	NY
Hazard	Ambient Water Quality--Toxics	✓			✓		✓	✓		✓
	The Storage and Retrieval System for Water						✓			
	Emergency Response/Spills						✓			✓
	Air Monitoring (criteria pollutants)	✓		✓	✓	✓		✓	✓	✓
	Air Monitoring (radon)	✓		✓					✓	✓
	Air Monitoring (pesticides)								✓	
	Drinking water	✓		✓	✓				✓	
	Remediation database									
	Fish Tissue	✓		✓				✓		
	Toxic Chemical Release	✓			✓	✓				✓
	Radiation									✓
	Electromagnetic									✓
	Pesticide sales				✓			✓		✓
Exposure	Behavioral Risk Factor Surveillance System	✓		✓			✓	✓	✓	✓
	Blood Lead Level	✓	✓		✓	✓	✓	✓	✓	✓
	Childhood Lead Poisoning Database	✓		✓	✓	✓	✓	✓	✓	✓
	Heavy Metal Registry			✓	✓		✓			✓
	Fish Consumption			✓						
	Mercury toxicity	✓		✓						
	Brownfields/Superfund					✓		✓	✓	✓
	Food and drug protection							✓		✓
	Nutrition							✓		
	Rodents/Animals							✓		
	Watersheds					✓		✓	✓	
Health Effects	Cancer registry	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Vital Record (births, deaths, fetal deaths)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Birth defects	✓		✓		✓	✓		✓	✓
	Hospital discharges	✓	✓		✓	✓	✓		✓	
	Ambulatory care						✓			
	Poison control			✓			✓		✓	✓
	Asthma surveillance		✓	✓	✓				✓	✓
	Indoor Air related		✓						✓	
	Children with Special Health Care Needs	✓		✓		✓		✓		✓
	Injury			✓				✓		
	Occupational disease			✓						✓
	Newborn Hearing	✓								✓
	Pesticide poisoning				✓				✓	✓
	Heat-related illness				✓					
	Emergency events				✓	✓				✓
	Heart disease							✓		✓
	Alzheimers and Dementia registry									✓
Intervention	Emissions compliance					✓				



Key Areas of Interest

- **Air pollution and Respiratory Disease**
 - **Environmental Hazards and Pediatric Health**
 - **Methylmercury and Developmental Disabilities and Cardiovascular Disease**
 - **Pesticides and Developmental Disabilities**
 - **Environmentally Related Cancers**
- **Cluster Approaches**

Selecting Indicators





Examining Cluster Phenomena

Assessment

- Literature Review
- Examination of Tracking Partners Cluster Experiences & Needs
- Inventory of current approaches

Analysis

- Evaluation of current approaches
- Identification of methodological challenges

Methods Development

- Identification and development of statistical methods to quantify patterns across states/regions
- Pilot tests
- Recommendations



Examining Health Effects of Air Pollution

The National Morbidity Mortality Air Pollution Study NMMAPS

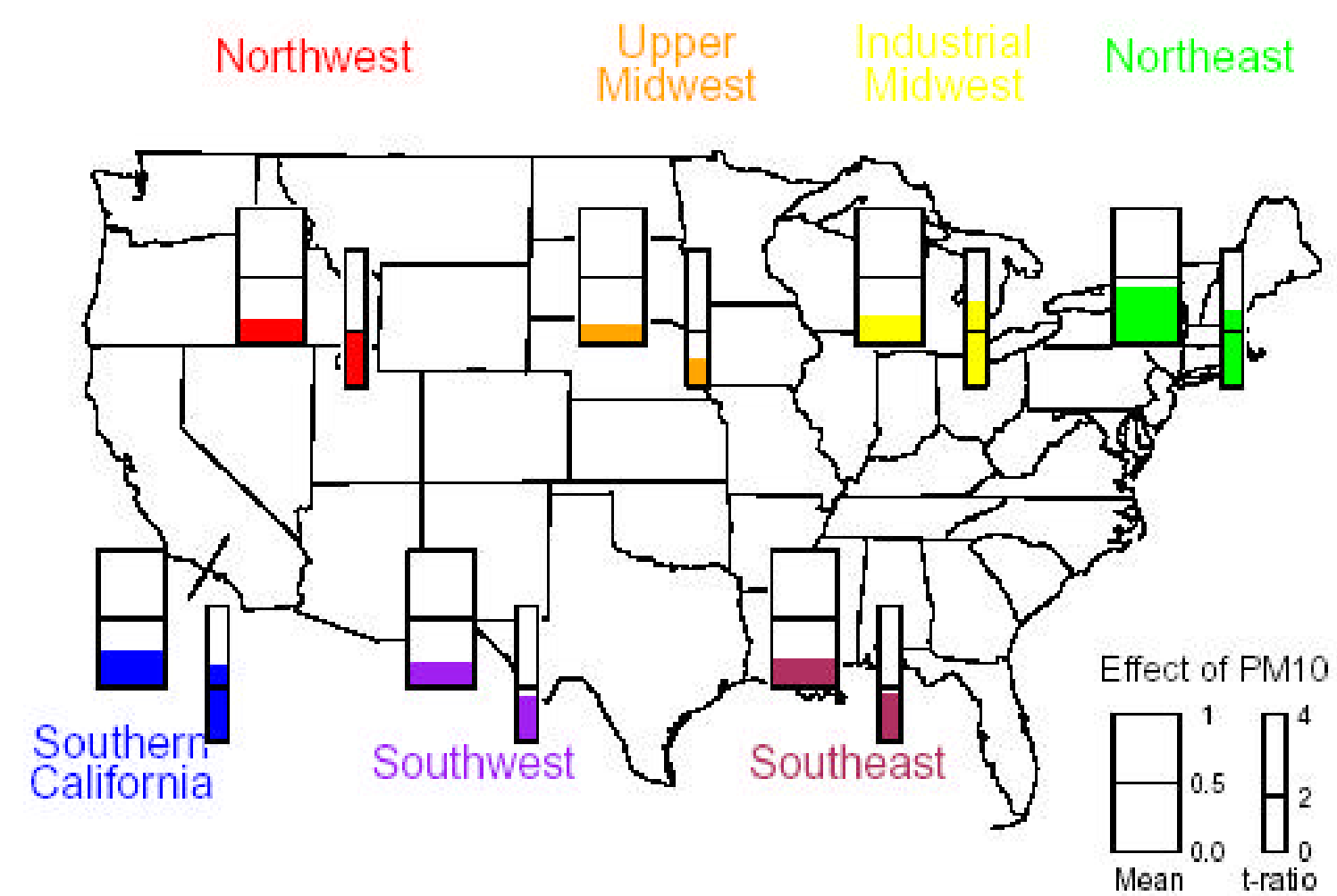


What is NMMAPS?

NMMAPS is a national approach for assessing the health effects of air pollution comprising:

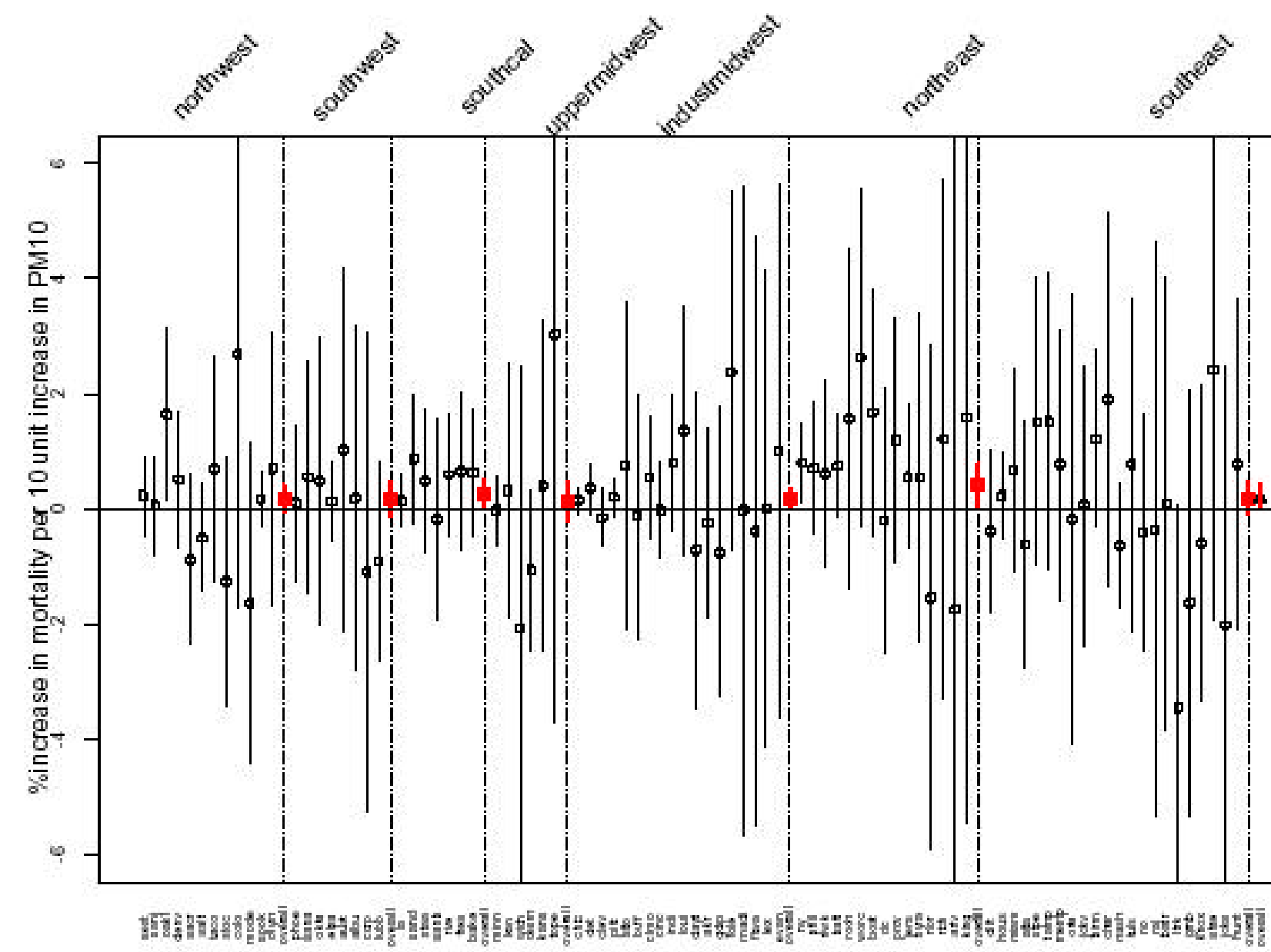
- 1. a national data base of air pollution and mortality:**
 - Daily time series of mortality, air pollution and weather were for the the 90 largest US cities for the period 1987-1994**
- 2. statistical methods to estimate associations between air pollution and mortality taking into account all sources of uncertainty**

Regional map of air pollution effects



Partition of the United States used in the 1996 Review of the NAAQS

City-specific and regional estimates



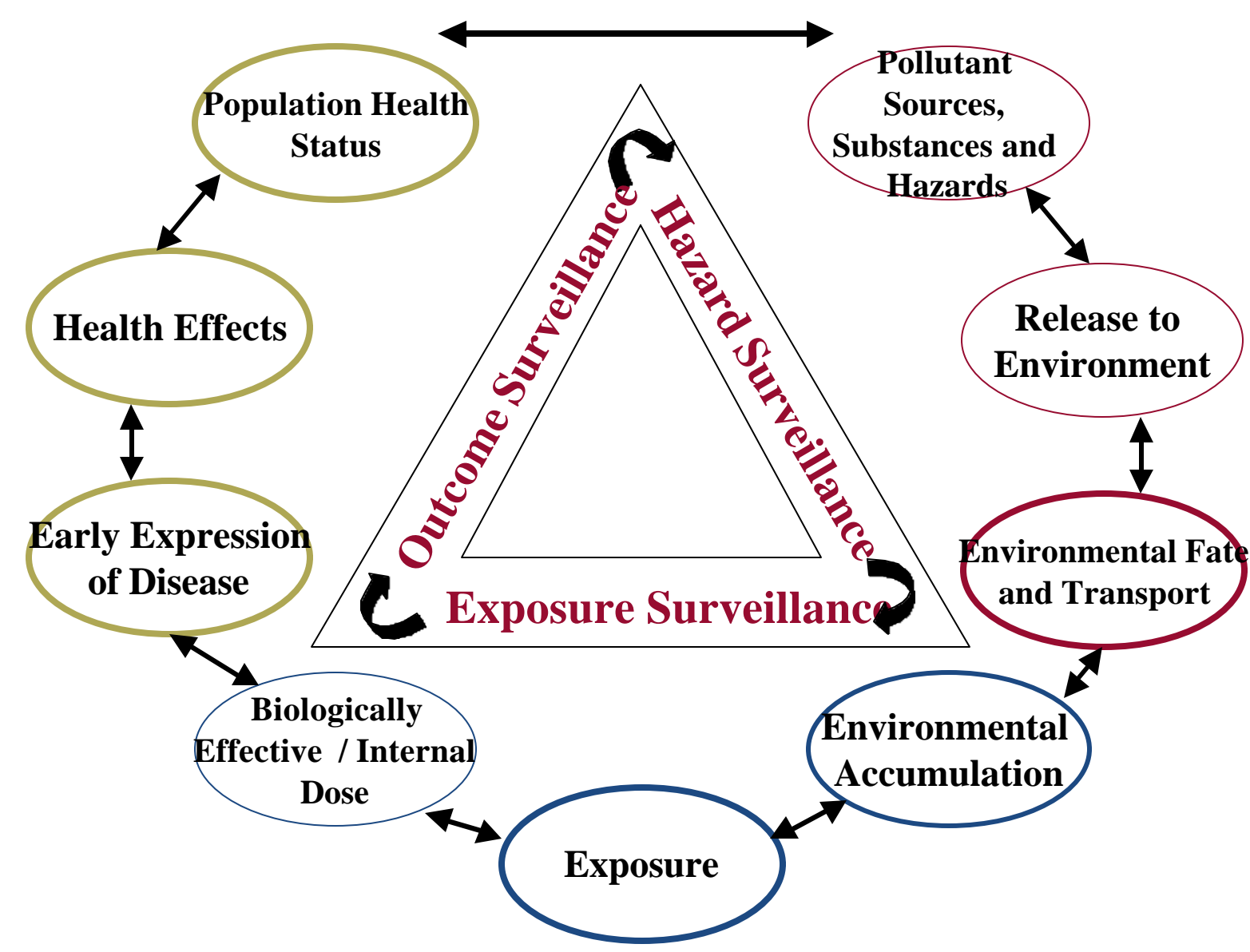


Realistic Accomplishments

In 3 Years..

- 1. National baseline tracking network for 3-5 diseases and exposures;**
- 2. State and local pilot programs that tested diseases, exposures and approaches for national tracking;**
- 3. Tracking links to communities and research developed.**

Future Linkages



Conclusions

Tracking brings unprecedented opportunity to:

- **Redefine the national approach to environmental protection**
- **Enhance our understanding of environment and health link**
- **Develop more effective, defensible environmental and public health policies**